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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/519,486	07/29/2005	Hiroaki Kurihara	Q85508	5314
23373 7590 10/10/2007 SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			EXAMINER GETACHEW, ABIY	
			ART UNIT 2841	PAPER NUMBER
			MAIL DATE 10/10/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/519,486

Applicant(s)

KURIHARA, HIROAKI

Examiner

Abiy Getachew

Art Unit

2841

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) 1-12 is/are objected to:
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 12/30/04, 04/11/05.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Saito (US 2002/0048156 A1)

Regarding claim 1 Saito discloses a flexible wiring substrate (figure 14) comprising an insulating substrate (101), a wiring pattern (112) formed on a surface of the insulating substrate (101), and a solder resist layer [0059] covering a surface of the wiring pattern (112) excluding at least terminal portions of the wiring pattern (112), at least a portion of the outermost surface of the wiring pattern (112) which is not covered with the solder resist layer [0059] being provided with a tin-bismuth alloy plating layer (115 and 116), characterized in that the wiring pattern (112) comprises a base layer formed of a conductor and that a first tin plating layer (115) is provided on the base layer (See figure 14) so as to extend under a region covered with the solder resist layer and also under a region not covered with the solder resist layer [0059].

Regarding claim 2 as applied claim 1 Saito discloses wherein the first tin plating layer (115) of the wiring pattern (112) present under a region not covered with the solder resist layer [0059] is provided with a second tin plating layer (116), and at least a portion of the area of the second plating layer (116) is provided with the tin-bismuth

Art Unit: 2841

alloy plating layer (115 and 116).

Regarding claim 3 as applied claim 1 Saito discloses wherein the first tin-plating layer (115) has a of 0.001 Mm to 0.6 Mm. [See section 0050]

Regarding claim 4 as applied claim 2 Saito discloses wherein the first tin plating layer has a thickness of 0.001 Mm to 0.6 Mm. [See section 0005] In re Aller, 105 USPQ 223.

Regarding claim 5 as applied claim 1 Saito discloses, wherein the first tin-plating layer has a thickness of 0.001 Mm to 0.2 Mm. [See section 0050] In re Aller, 105 USPQ 223.

Regarding claim 6 as applied claim 2 Saito discloses, wherein the first tin plating layer has a thickness of 0.001 Mm to 0.2 Mm. [See section 0050] In re Aller, 105 USPQ 223.

Regarding claim 7 as applied claims 5 or 6 Saito discloses wherein the first tin plating layer (115) is not subjected to heat treatment before provision of the solder resist layer [0059].

Regarding claim 8 as applied claims 1 or 6 Saito discloses wherein the wiring pattern (112) comprises a patterned copper layer and the first tin-plating layer formed on the copper layer [See section 0050].

Regarding claim 9 as applied claim 7 Saito discloses, wherein the wiring pattern comprises a patterned copper layer [See section 0005] and the first tin plating formed on the copper layer [See section 0050].

Regarding claim 10 Saito discloses A method for producing a flexible wiring (See

figure 14) substrate including an insulating substrate (101), a wiring pattern (112) formed on a surface of the insulating substrate (101), and a solder resist layer covering a surface (115 and 116) of the wiring pattern (112) excluding at least terminal portions of the wiring pattern (112), at least a portion of the outermost surface of the wiring pattern (112) which is not covered with the solder resist layer being provided with a tin-bismuth alloy plating layer (115,116), characterized in that the method comprises a step of forming a base layer of the wiring pattern (112) through patterning of a conductor layer [Section 0050] a step of forming a first tin plating layer on the base layer(101) a step of forming a solder resist layer (See figure 14) so as to cover the first tin plating layer such that a portion of the first tin plating layer is exposed a step of forming a second tin plating layer on a region of the first tin plating layer (115), which region is not covered with the solder resist layer [Section 0050] and a step of providing a tin-bismuth alloy plating layer on at least a portion of the region of the second tin plating layer (116).

Regarding claim 11 as applied claim 10 Saito discloses, wherein the first tin-plating layer (115) is formed so as to have a thickness of 0.001 micro m to 0.6 micro m. [See section 0050]

Regarding claim 12 as applied claim 10 Saito discloses, wherein there are performed a step of forming the first tin plating layer so as to have a thickness of 0.001 micro m to 0.2 micro m and, subsequently, a step of forming the solder resist layer [0059] without performing heat treatment [Section 0061].

### **Conclusion**

Art Unit: 2841

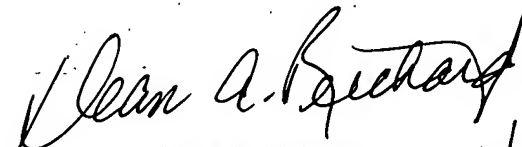
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Abiy Getachew whose telephone number is (571) 272 6932. The examiner can normally be reached on Monday to Friday 8Am to 4:30Pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean A. Reichard can be reached on (571) 272 1984. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Abiy Getachew  
Examiner  
Art Unit 2841

A.G.  
September 18, 2007

  
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10/1/07